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Group Site Design -Electrical

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Electrical Responsibilities

- Knowledgeable with National Electric Code (NEC), NFPA 70
- Coordination, coordination, coordination
- Multitasking
- Proactive
- Flexible

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Electrical Distribution

- Meet on - site with power co.:
  - Develop a preliminary plan before meeting
  - Aerial / below ground feasibility
- Obtain “right – of - way” clearances:
  - Determine tap locations
  - Obtain additional contacts as required - metering

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Electrical Distribution

- Prepare a layout design:
  - Why? This is the power co.'s job:
    - This will impact the design time and construction schedule in a very positive way
  - Work closely with civil designer and environmental person to discuss necessary clearances - CWL and environmental permits

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Electrical Distribution

- Prepare a distribution layout based on pad layout:
  - CWL and clearances (locally obtained)
- Right of way clearances for distribution lines typically 20’
- Transmission lines are voltage dependent:
  - Don’t assume any clearances - obtain

Electrical Distribution

Prepare a layout design (cont.):

- Pole Layout (rules of thumb):
  - Keep them in a straight line if possible
  - If angle exceeds 3 degrees and wire is high tension, a guy wire is necessary
  - If guys are used - typically design for 20’ spans and show them on

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Electrical Distribution

Spacing:

- Max primary pole spanning and light pole spanning is approximately 200 feet
- Max secondary drops spanning is approximately 100 feet
- Service pole is a maximum of 30 feet and a minimum of 3 feet from the unit and visible:
  - NEC Art. 550.32 (A) and typical power co. requirements

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Technical Details

- Technical details (a typical) should be provided to illustrate minimum contract requirements:
  - Determine power requirements and connection locations for trailers:
    - Typically 120/240V 200A, single phase
  - This will allow a basis for the contractor to bid on the work

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Prepare Specifications

- Specifications will reflect (NEC) and local standards and codes

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Electrical Calculations

- Prepare electrical calculations:
  - Comply with NEC Art. 550 for mobile homes
  - Comply with NEC Art. 551 for recreation vehicles

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Preliminary Design

- Meet on - site with power co., cable company, and phone company:
  - Review design with all utilities
  - Coordinate utilities to eliminate the need for additional guying
  - Make changes to design if necessary
  - Coordinate any design changes with civil designer

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Final Design

- Provide electronic and hard copies of design to utility companies:
  - The electronic copies can be used by the power co.
  - Will greatly benefit the construction schedule
- Provide hard copies of design and hard copies of specifications to contracting officer/resident engineer

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Construction

- Coordinate with power company before, during and after construction
- Coordinate with resident engineer and sub - contractor
- Coordinate with phone and cable companies